Ianthopappus, a New Genus of the Tribe Mutisieae (Compositae)

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ABSTRACT. The new genus *Ianthopappus* Roque & D. J. N. Hind (Compositae, Mutisieae) is described, and a new combination, *Ianthopappus corymbosus* (Lessing) Roque & D. J. N. Hind, is made. The single species is easily distinguished by its subshrubby habit, discolorous leaves with actinodromous venation, corymbiform inflorescences, and a 3-seriate pappus with ca. 130 free, purple setae. Comparison is made between *Ianthopappus* and other members of the Mutisieae that possess apiculate to acuminate apical anther appendages and are placed in a more narrowly defined subtribe Gochnatiinae. *Ianthopappus* is distributed in southern South America from Brazil (Rio Grande do Sul), Uruguay, and northern Argentina.

Key words: Argentina, Brazil, Compositae, *Ianthopappus*, Mutisieae, South America, Uruguay.

The generic position of *Gochnatia corymbosa* Lessing (Compositae, tribe Mutisieae Cassini) has been debated since its initial description (Lessing, 1830). Bentham (1873) considered that *G. corymbosa*, with its habit and distinctive capitulum, was better assigned to the genus *Onoseris* Willdenow. This position was maintained by Baker (1884), but later contested by Ferreyra (1944) in his revision of *Onoseris*. Ferreyra (1944), after having examined *Sellow 3479* (later the neotype of *Gochnatia corymbosa* assigned by Cabrera, 1970), concluded that the species was not an *Onoseris* but probably a species of *Gochnatia*, the genus in which it was initially described. Cabrera (1970) re-assessed the tentative generic position of this species and treated it as a species of *Actinoseris* (Endlicher) Cabrera, transferring it from *Gochnatia*, based principally on the heterogamous radiate capitulum.

According to Bremer (1994), *Gochnatia* is the crucial taxon in understanding the Mutisieae. In *Gochnatia*, which is the largest genus of the tribe, all species have discoid homogamous capitula and the apical anther appendages are acuminate to apiculate. Bremer (1994: 80) also stated that "a number of genera apparently have their sister groups within *Gochnatia*." The examples given were *Actinoseris*, *Chucoa* Cabrera, *Cnicothamnus* Grisebach, *Cyclolepis* Gillies ex D. Don, *Hyalis* D. Don ex Hooker & Arnott, and *Nouelia* Franchet. These are distinguished mainly by capitula characters and geographic distribution (Table 1).

In the present paper, it is proposed that *Actinoseris corymbosa* (Lessing) Cabrera is recognized as belonging to a new genus, based upon our extensive morphological studies. *Ianthopappus corymbosus* is characterized by its striate leafy, silvery stem, the truncate elliptic to orbicular leaves, which are discolorous, white-tomentose to glabrescent above, silvery-sericeous beneath and have actinodromous venation, the corymbiform inflorescences, and the 3-seriate pappus, with ca. 130 purple setae (Table 2).

The new genus is described below.

Ianthopappus Roque & D. J. N. Hind, gen. nov. TYPE: *Ianthopappus corymbosus* (Lessing) Roque & D. J. N. Hind. Figure 1.

Tribus Mutisieae, subtribus Mutisiinae Lessing. Suffrutex; caules omnino foliosi; folia e base valde 3-nervia; inflorescentia laxe corymbosa, pauciceps vel multiceps; capitula radiata, heterogama, pedicellata, pedicellis bracteolatis; involucrum 5–7 seriatum; flosculi purpurascentes, eis marginatis bilabiatis, feminina, eis centralibus profunde 5-lobatis etiam bisexualibus; rami stylorum bifidi, appendices antherarum basales caudatae, longe attenuatae, pilosae, apicales item longe attenuatae; achenia longe denseque setulifera; pappus 3-serialis, purpurascens, setis apice dilatatis.

Ianthopappus corymbosus (Lessing) Roque & D. J. N. Hind, comb. nov. Basionym: *Gochnatia corymbosa* Lessing, Linnaea 5: 263. 1830. *Onoseris corymbosa* (Lessing) Bentham & Hooker f., Gen. pl. 2(1): 487. 1873. *Actinoseris corymbosa* (Lessing) Cabrera, Bol. Soc. Argent. Bot. 13: 52. 1970. TYPE: Brazil. "*Sellow* in Brasilia meridionali (v.sp.s.∞)." Syntypes: B destroyed. *Sellow 3479* (neotype, designated by Cabrera (1970), K; isoneotype, P (designated here), photo FI, NY, US). [Following Herter & Rambo (1953), *Sellow 3479* was collected in January 1826 between São Gabriel and Ibicuí in the state of Rio Grande do Sul, Brazil.] Figure 1.

Table 1. Genera related to *Ianthoppapus corymbosus* with apiculate to acuminate apical anther appendages (following Bremer, 1994).

	Geographic distribution	Species number	Habit	Capitula	Florets
Actinoseris	Brazil	7	Subshrubs, herb	Scapose to cymose, radiate, heterogamous	Ray: white; disc: white or rose
Ianthopappus	Brazil, Uruguay, Argentina	1	Subshrub	Corymbose, radiate, heterogamous	Ray: white; disc: purple
Chucoa	Peru	1	Shrub; spiny leaves	Solitary, discoid, homogamous	Yellow
Cnicothamnus	Bolivia, Argentina	2	Shrubs or small trees; pinnately nerved leaves	Solitary, radiate homogamous	Orange-yellow to orange-red
Cyclolepis	Bolivia, Argentina, Paraguay	1	Gynodioecious shrub, halophytes	Solitary to sub-spiciform, discoid, homogamous	Yellowish
Gochnatia	Southern United States, West Indies, Central and South America, Asia	ca. 68	Trees, shrubs, rarely subshrubs; sometimes dioecious	Solitary to corymbose or paniculate, discoid, homogamous	Cream or yellowish
Hyalis	Bolivia, Argentina, Paraguay	2	Subshrubs; 3–5-nerved leaves	Corymbose, radiate, homogamous	Pink, white, or purple
Nouelia	China	1	Shrub	Solitary, radiate, homogamous	Ray and disc florets white

Subshrub to 1 m, chamaephyte, stems striate, leafy, silvery, glabrescent. Leaves alternate, sessile to subsessile, petiole to 8 mm, truncate, lamina coriaceous, elliptic to orbicular, 4.0–8.5 × 2.3–8.0 cm, discolorous, white-tomentose and glabrescent above, silvery-sericeous beneath, 3-veined, venation actinodromous, margins entire, apex obtuse, mucronulate. Inflorescence few- to many-headed (2–18), corymbiform-paniculate, peduncle sericeous when young, glabrescent, later becoming glaucous-green, bracteate; lower bracts foliose, 2.5–5.0 × 0.8–2.0 cm, elliptic; upper bracteoles ca. 3–5 mm long, lanceolate, sericeous, upper surface red wine-colored, lower surface silvery-green, apices erect to reflexed, acuminate. Capitula radiate, heterogamous; involucres campanulate, 2 cm diam. × 1.5 cm tall; phyllaries 5–7-seriate, apices erect to curved, acuminate, outermost 4–6 × 0.5 cm, lanceolate, innermost 1.0–1.2 × 0.5 cm, linear, sericeous, inner surface purple, outer surface sericeous, silvery-green. Florets ca. 46, corolla fleshy, corolla tube glabrous, corolla-lobe apices revolute, obtuse, fleshy on outer surface, papillose, rarely short-pubescent; ray florets female, bilabiate, ca. 10, white, outer surface of limb and lobes red-wine-colored, 1.4–1.8 cm long, staminodes 3–5 mm long; disc florets bisexual, 5-lobed, purple, 1.5 cm long, corolla lobes ca. 0.7 mm long; anther cylinder 6–7 mm long, purple, inserted halfway up the corolla tube; apical anther appendages acute to acuminate, basal anther appendages caudate, laciniate; style ca. 1 cm long with swollen base, glabrous, style-arms 2, sometimes 3, short, glabrous, purple. Cypselas fusiform, 10-ribbed, 13–15 mm long, setuliferous, silvery-green; embryo obovate, ca. 5 mm long; pappus setae 3-seriate, ca. 6 mm long, ca. 130, free, coarsely barbellate, purple.

Ianthopappus corymbosus has a southern extratropical distribution in the extreme south of Brazil, in the region of Alegrete and Uruguaiana (Rio Grande do Sul), and extends into Argentina (Corrientes) and Uruguay (Artigas) (Fig. 2).

Mondin and Baptista (1996: 67) indicated that the Brazilian region where the species is found in southwestern Rio Grande do Sul is called "campanha." According to the authors, the vegetation in this region is "campestre," with a predominance of

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Figure 1. *Ianthopappus corymbosus* (Lessing) Roque & D. J. N. Hind (*Roque et al. 462*). —A. Habit. —B. Rootstock. —C. Involucre. —D. Inner phyllary. —E. Ray floret. —F. Disc floret. —G. Anther. —H. Style (apex and base). —I. Ribbed cypselas. —J. Cypselas opened along the ribs. —K. Seed in longitudinal section. —L. Embryo.

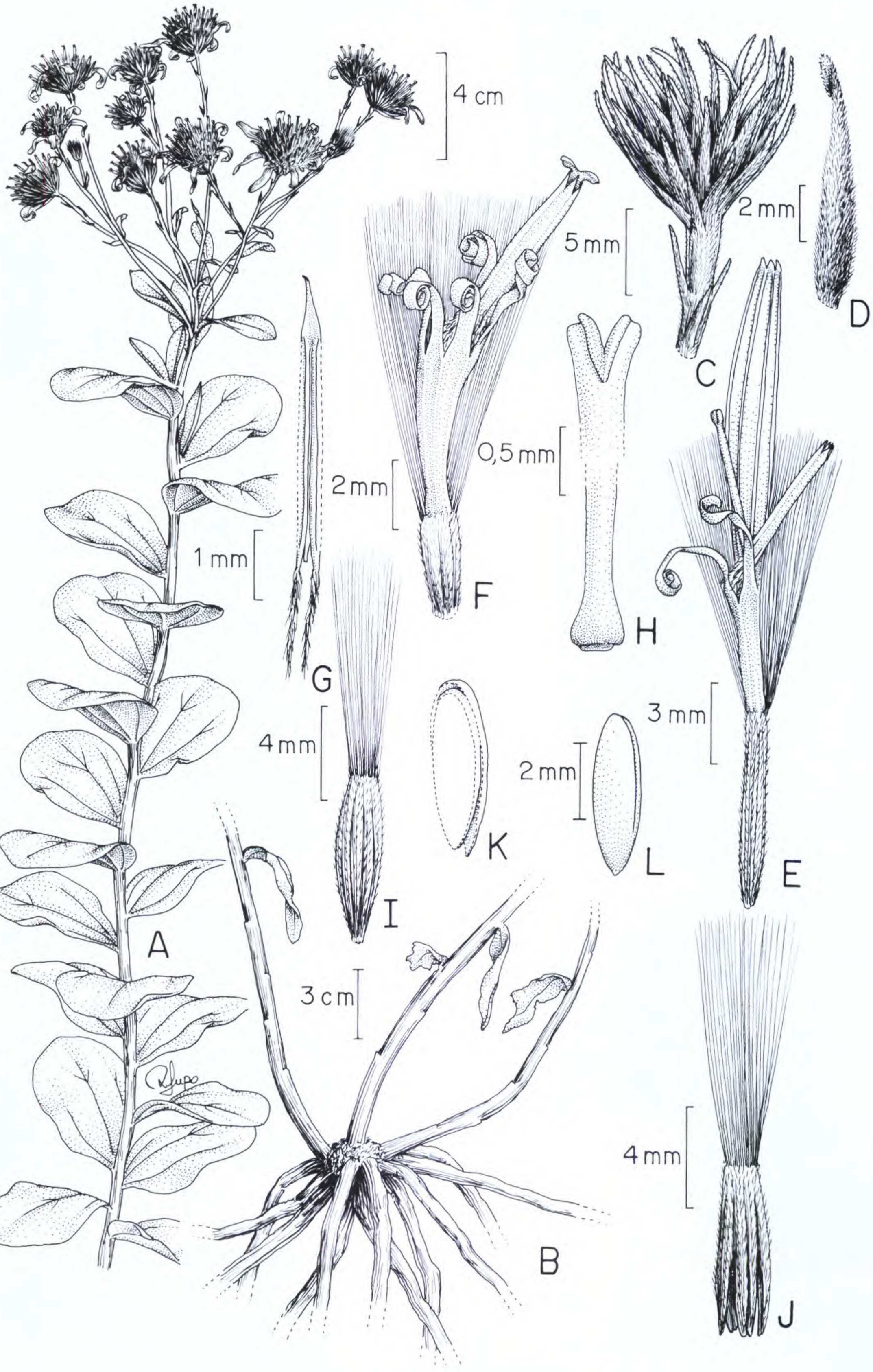
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Table 2. Comparison of *Ianthopappus* with *Gochnatia* and *Actinoseris* based on morphological studies.

	Ianthopappus	*Gochnatia* s.str.* (Cabrera, 1971)	*Gochnatia* sect. *Discoseris* (Cabrera, 1971)	*Actinoseris* (Cabrera, 1970)
Habit	Subshrub	Trees or shrubs**	Subshrubs***	Subshrubs or herbs
Leaf venation	Actinodromous	Actinodromous to pinnate	Pinnate	Pinnate
Pappus	3-seriate	2-seriate	1-seriate	1-seriate
Number of pappus setae	Ca. 130	Ca. 50	35–38	25–40
Pappus setae	Free	Free	United at base into fleshy ring	United at base into fleshy ring
Pappus coloration	Purplish	Straw	Straw	Straw

* *Gochnatia* Kunth excluding *Gochnatia* sect. *Discoseris* Cabrera.
** Woody stem and shoots.
*** Stem unbranched, woody only at the base.

steppe and several pockets of steppe-like savanna. Steppes represent a subtropical community demonstrating double extremes of seasonality, one season caused by the cold of the polar fronts in the winter and the other associated with a short period of drought during the summer. All of the species of the tribe Mutisieae occurring in the campestre vegetation (five species of *Chaptalia* Ventenat, three species of *Pamphalea* Lagasca, three species of *Trixis* P. Browne, *Gochnatia polymorpha* (Lessing) Cabrera subsp. *ceanothifolia* (Lessing) Cabrera, *Holocheilus brasiliensis* (L.) Cabrera, *Jungia floribunda* Lessing, *Mutisia coccinea* A. St.-Hilaire, *Perezia multiflora* Lessing, *Schlechtendalia luzulifolia* Lessing, and *Trichocline incana* Cassini), including *I. corymbosus*, are also present in Uruguay.

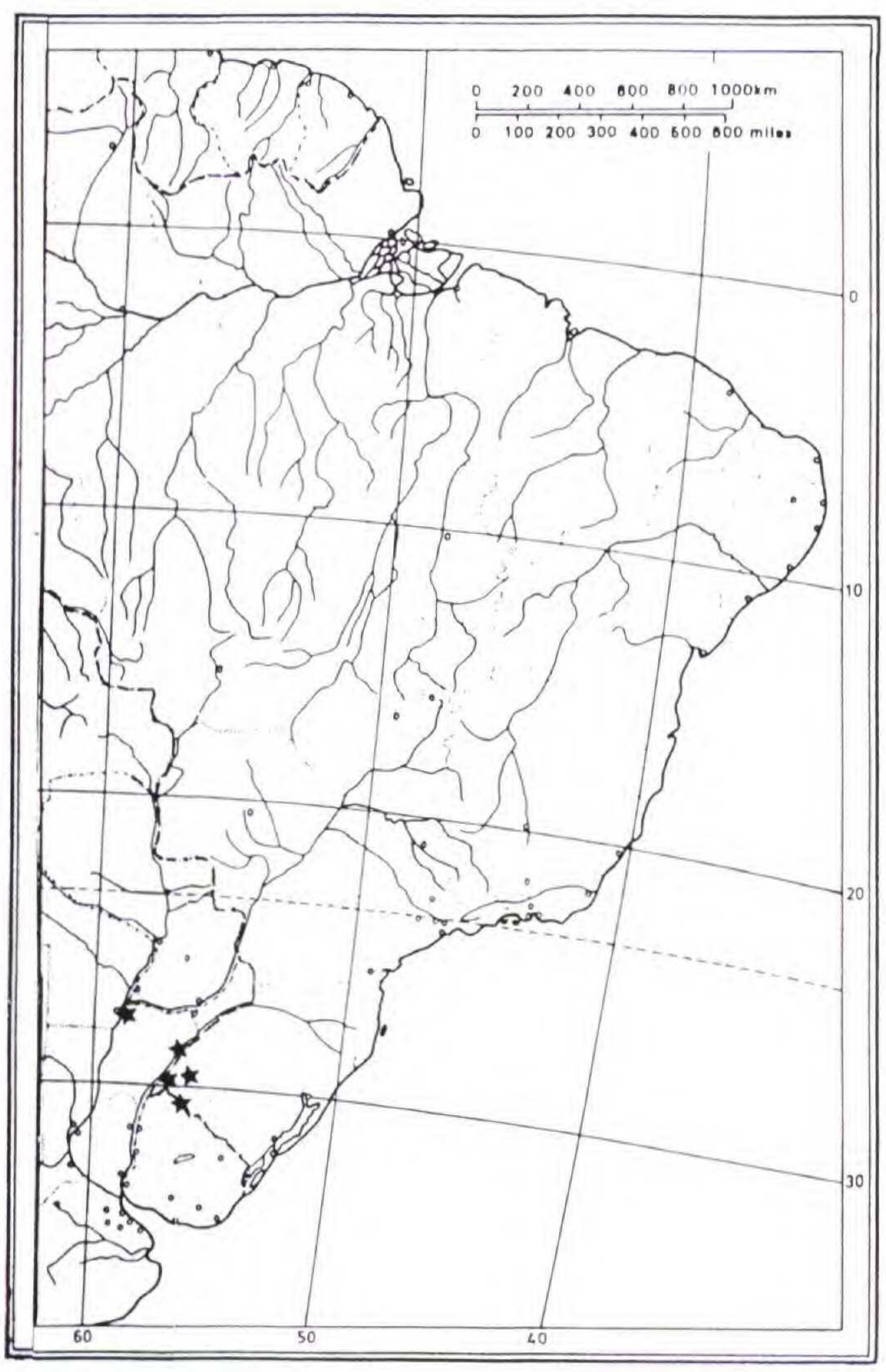

Figure 2. Geographic distribution of *Ianthopappus corymbosus* (★).

Ianthopappus corymbosus was recently collected by N. Roque (March 1998) in the Reserva Biológica de Ibirapuitã, Alegrete (Rio Grande do Sul, Brazil), from a small population with clumped individuals in "campo sujo" in sandy soil and marshes. This species stands out with its distinctive purplish pappus and red-wine-colored corolla contrasting with the silvery indumentum of the involucre and the underside of the leaves. It was noted that several aerial stems are produced from the same rootstock (Fig. 1B). No other members of the Mutisieae were found in the same locality.

The latter material has mature achenes apparently exhibiting precocious germination while still in the capitulum (Fig. 1J). The achene wall is often seen fractured, exposing the enclosed seed. This phenomenon has not been observed in other material of *Ianthopappus* or other members of the Mutisieae.

Material examined. ARGENTINA. **Corrientes:** 1831, *Bonpland s.n.* (P); Paso Troncón, 26 Mar. 1948, *Palacios-Cuezzo 2304* (LP). **Santo Tomé:** 27 Feb. 1983, *Schinini et al. 23425* (MBM); 10 km SE de Azara, 13 Feb. 1991, *Tressens et al. 3840* (MBM). BRAZIL. **Rio Grande do Sul:** Alegrete, Reserva de Ibirapuitã, 03 May 1986, *Wasum s.n.* (PACA 73215, UCS 1529, US); Reserva Biológica do Ibirapuitã, 21 Mar. 1998, *Roque et al. 462* (K, SPF); Uruguaiana, 19 Aug. 1957, *Spies s.n.* (PACA 60771); s. loc. Província do Rio Grande, 1833, *Sellow 831* (P); s. loc. spec. 1821, *St. Hilaire Cat. C2–2614* (P); 1821,

St. Hilaire 521 Cat. C2–2617 (P 2x). URUGUAY. **Artigas:** Rio Cuareim, 1836, *Chebataroff 3015* (LP).

Acknowledgments. The authors are grateful to the curators of the following herbaria for the loan of material: FI, LP, K, MBM, NY, P, PACA, UCS, US. Various aspects of the present study (undertaken by N. Roque) were supported by CAPES. Logistic support for the first author was provided by the Universidade de São Paulo during her Ph.D. studies. Special thanks are due to José Rubens Pirani (Universidade de São Paulo) for useful comments on this manuscript. Sincere acknowledgments are extended to Ronaldo Wasum (Universidade de Caxias do Sul) and Eliseu Moraes (Secretário do Meio Ambiente de Alegrete) for extending every hospitality to the first author in locating this plant in the field. The authors also thank Mike Lock (Royal Botanic Gardens, Kew) for providing the Latin diagnosis.

Literature Cited

Baker, J. G. 1884. Compositae. IV. Helianthoideae, Helenioideae, Anthemideae, Senecionidae, Cynaroideae, Ligulatae, Mutisiaceae. *In* C. P. von Martius & A. W. Eichler (editors), Flora brasiliensis 6(3): 339–396.

Bentham, G. 1873. *In* G. Bentham & J. D. Hooker (editors), Genera Plantarum 2(1): 487. Reeve, London.

Bremer, K. 1994. Asteraceae: Cladistics & Classification. Timber Press, Portland, Oregon.

Cabrera, A. L. 1970. *Actinoseris*, nuevo género de Compuestas. Bol. Soc. Argent. Bot. 13(1): 45–52.

———. 1971. Revisión del género *Gochnatia* (Compositae). Revista Mus. La Plata 12(66): 1–159.

Ferreyra, R. 1944. Revision del género *Onoseris* Willd. J. Arnold Arbor. 25: 349–395.

Herter, W. G. & B. Rambo. 1953. Nas pegadas dos naturalistas Sellow e Saint-Hilaire. Estudios Botanicos em la region Uruguaya. Revista Sudamer. Bot. 10(3): 61–98 & tab. 7.

Lessing, C. R. 1830. Synathereis Herbarii Regii Berolinensis, Dissertatio Tertia, Linnaea 5: 237–263.

Mondin, C. A. & L. R. M. Baptista. 1996. Relações Biogeográficas da tribo Mutisieae Cassini (Asteraceae), *sensu* Cabrera, no Rio Gande do Sul. Comum. Mus. Ciênc. Tecnol.- PUCRS, Sér. Bot. Porto Alegre 2: 4–152.